ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

Multiscale hierarchical decomposition methods for ill-posed problems

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ABSTRACT

The Multiscale Hierarchical Decomposition Method (MHDM) is a popular method originating from mathematical imaging. In its original context, it is very well suited to recover approximations with fine details of blurred and noise-corrupted images. The main idea is to iteratively decompose an image into a cartoon and a texture part at different scales. We consider the algorithm in a more general framework, allowing one to apply it for a wider variety of problems. We expand existing convergence results, and propose a necessary and sufficient condition under which the iterates of the MHDM agree with the well-known Tikhonov regularization. We conclude by discussing our results on several examples. This is joint work with Stefan Kindermann and Elena Resmerita.

We hope to see you there!